

In-hospital outcomes and mortality in octogenarians after percutaneous coronary intervention

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Abstract

Background: There is systematic growth in the number of elderly patients treated with percutaneous coronary intervention (PCI); however, little is known about PCI results in the very elderly (long-lived) patients aged 85 years and above.

Aim: To assess the demographic, clinical, and angiographic findings in patients aged > 85 years (GER), undergoing PCI, compared with younger patients treated in the year 2012.

Methods: This was a single centre retrospective study based on a consecutive group of 920 patients with coronary disease (stable and acute coronary syndrome [ACS]). Patients were divided into two groups: GER aged 85 years and over (n = 82) and controls (CG) below 85 years (n = 838).

Results: The mean age in the GER group was 88.6 vs. 66.7 years in the CG. There were more females in the GER group (57% vs. 29%) than in the CG (p < 0.001). The indication for PCI was mainly ACS in GER (65%) vs. CG (50%) including ST segment elevation myocardial infarction (STEMI) 30% vs. 29% (p = NS), ACS non-STEMI 35% vs. 20% (p = 0.01). GER patients had more comorbidities and more advanced multivessel coronary artery disease. The ratio of procedural success was lower in GER compared to CG. The incidence of in-hospital death was higher in GER (4.8%) compared to CG (0.83%); the most common complication in GER group was contrast-induced nephropathy (18.2% vs. 6.2%). Major adverse cardiovascular events were significantly more frequent in GER patients with ACS compared to CG patients with the same diagnosis.

Conclusions: Patients > 85 years old, especially with ACS undergoing PCI, are at greater risk of in-hospital complications, especially contrast-induced nephropathy and procedural complications, compared to younger patients.

Key words: coronary revascularisation, percutaneous coronary intervention, elderly

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INTRODUCTION

In the city of Lodz in the 1990s we observed strong tendencies indicating rapid and extensive ageing of the city's population. There is systematic growth in the number of citizens in the post-productive age (20.3% of the population). The city of Lodz is one of the most feminised Polish cities, especially with regard to the older population (average 120 females per 100 males). As prognosis indicates, we should expect an emigration process in the scale of 10% of inhabitants per 20 years, with a coexisting dramatic decrease in the younger population (25%), and with a significant increase in the post-productive

population of up to 28% of citizens. Octogenarians are the most rapidly growing sector of the treated population. This population presents the highest risk of complications both acute during percutaneous coronary intervention (PCI) procedure and those observed during follow up. The high incidence of complications may be due to the high prevalence of associated comorbidities and late referral for revascularisation. However, since the baseline risk to the octogenarian population is high, those patients can gain the most clinical benefit from an early invasive approach, compared to conservative management [1, 2].

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However, little is known about PCI results in very elderly patients, mainly because elderly patients with severe comorbidities are often excluded from randomised clinical trials [3].

The aim of the present study was to assess the clinical characteristics, procedural details, and in-hospital outcomes in the group of patients older than 85 years, in comparison with data from a control group of consecutive patients aged < 85 years undergoing PCI.

METHODS

This was a single-centre, non-randomised, retrospective study of all consecutive patients who underwent PCI at USK WAM-CSW Hospital between January 2012 and January 2013. The study group was composed of patients referred for PCI due to acute coronary syndrome (ACS) or because of symptoms of stable coronary artery disease (CAD). The inclusion criterion for the study was the presence of a significant lesion in the coronary artery with subsequent PCI. Patients were divided into two subgroups with respect to age: all patients aged 85 years and above — octogenarians — GER, and the control group (CG) with patients under 85 years of age. Patients with stable CAD or ACS were treated according to the current guidelines of the European Society of Cardiology [4, 5]; however, the procedural strategy regarding the use of a stent (drug-eluting stent [DES] or bare metal stents [BMS], balloon angioplasty, or administration of glycoprotein [GP] IIb/IIIa inhibitors) was left to the discretion of the interventional cardiologist performing the PCI.

The authors declare that the study complies with the Declaration of Helsinki. The research protocol was approved by the locally appointed Ethics Committee

Patients were evaluated clinically during hospitalisation. Clinical end points evaluated in this study were death, myocardial infarction (MI), and transient ischaemic attack. All of the above-mentioned adverse events were considered as major adverse cardiovascular events (MACE). Adverse events related to coronary intervention were defined as: contrast-induced nephropathy (CIN), vascular puncture site complication (conversion from transradial to femoral approach), pseudoaneurysm, haematoma, or major bleeding related to puncture site.

Definitions

Death was considered cardiac unless an unequivocal non-cardiac cause was identified. MI was diagnosed according to the third universal definition of MI [6]. The Academic Research Consortium definition for definite or probable stent thrombosis was used [7]. Technical success of PCI was defined as the ability to cross with the device and deploy the stent/balloon as intended at the target lesion. Angiographic success was defined as technical success with achievement of a final diameter of stenosis < 30%, with TIMI flow 3 assessed by quantitative coronary angiography (QCA). Procedural suc-

cess was defined as technical and angiographic success in the absence of MACE at hospital discharge.

CIN after PCI was defined as a rise in serum creatinine levels [Cr] ≥ 0.5 mg/dL, or by $\geq 25\%$ at 48–72 h after exposure to a contrast agent, compared to baseline serum Cr values, when alternative explanations for renal impairment were excluded [8].

Coronary angiographic data acquired during index coronary intervention were analysed by QCA with the CAAS5 analysis system. The following QCA parameters were determined: reference vessel diameter, lesion length, and percentage diameter stenosis. Also, the type and characteristics of the target lesion were assessed.

Statistical analysis

Categorical variables showed as percentages were compared using χ^2 test or Fisher's exact test. Continuous variables were compared with independent-samples t-test. All statistical analyses were made using Statistica 6.0 PL software (Stat Soft Inc Tulsa OK, USA).

RESULTS

In the year 2012 a total of 920 consecutive patients were referred for PCI in our centre. From this subset of patients 82 (8.9%) were aged 85 years or above — GER. Previous medical history of the patients, incidence of risk factors for CAD, patients' clinical presentation on admission, data from coronary angiography and angioplasty procedure, procedural outcome, and in-hospital outcome were assessed. Baseline characteristics of the study population are presented in Table 1. The mean age of the GER group was 88.6 ± 2.1 years compared to CG — 66.7 ± 11.2 years ($p < 0.001$). The proportion of females was significantly higher in the GER group. The octogenarian group was characterised by a higher proportion of patients with hypertension, chronic kidney failure, hypercholesterolaemia, and previous MI; however, diagnosis of diabetes mellitus was more frequent in the controls. There were a significantly lower proportion of current smokers among the octogenarians (Table 1).

Patients in the GER group were more likely to have multivessel CAD and were mainly presented as non ST-segment elevation MI. Diagnostic angiography revealed that patients in the GER group had more complex lesions (type B2 or C); however, in the controls there were more bifurcation lesions treated. Data of index angiography are presented in Table 2. The strategy of PCI procedures was different between the two groups. Lesion treated per patient ratio and PCI of two vessels was more frequent in the GER group. More stents were used, especially more BMS stents, in the GER group compared to the younger patient group. Significantly fewer GER patients received infusions of GP IIb/IIIa inhibitor. The total mean procedure time (65.9 ± 29.8 vs. 57.8 ± 36.2 min; $p < 0.05$) was longer in the GER group. Detailed data are presented in

Table 1. Baseline characteristics of studied population

	GER, n = 82 (age > 85 years)	CG, n = 838 (age < 85 years)	P
Age [years]	88.6 ± 2.1	66.7 ± 11.2	< 0.001
Female	47 (57.3%)	249 (29.7%)	< 0.01
Diabetes mellitus	12 (14.6%)	217 (25.9%)	< 0.03
Hypertension	63 (76.8%)	541 (64.5%)	< 0.03
Smoker (current)	3 (3.6%)	122 (14.5%)	< 0.01
Body mass index [kg/m ²]	26.1 ± 6.2	27.3 ± 9.7	NS
Previous myocardial infarction	33 (40.2%)	230 (27.4%)	< 0.02
Hypercholesterolaemia	40 (48.7%)	599 (71.4%)	< 0.001
Chronic kidney disease (GFR < 60)	11 (13.4%)	47 (5.6%)	< 0.01
Total ACS	54 (65.8%)	424 (50.5%)	< 0.01
ACS NSTEMI	29 (35.3%)	173 (20.6%)	< 0.003
ACS STEMI	25 (30.4%)	251 (29.9%)	NS
Stable coronary artery disease	28 (34.1%)	414 (49.4%)	< 0.01
Previous revascularisation:			
Percutaneous coronary intervention	28 (34.1%)	272 (32.4%)	NS
Coronary artery bypass graft	14 (17%)	127 (15.1%)	NS

Data are presented as number and percentage (in abbreviation) of patients; ACS — acute coronary syndrome; ACS NSTEMI — ACS without ST segment elevation; ACS STEMI — ACS with ST segment elevation; GFR — glomerular filtration rate; GER — octogenarians; CG — control group

Table 2. Angiographic findings, target lesion characteristic

	GER, n = 82 (age > 85 years)	CG, n = 838 (age < 85 years)	P
Single vessel disease	18 (21.9%)	408 (48.6)	< 0.001
Multivessel disease	64 (78.1%)	430 (51.4%)	< 0.001
Reference vessel diameter [mm]	2.95 ± 0.48	2.94 ± 0.55	NS
Ostial lesion	4 (4.8%)	57 (6.8%)	NS
Bifurcation	6 (7.3%)	129 (15.4%)	< 0.07
Lesion length [mm]	14.2 ± 7.3	14.7 ± 6.2	NS
Lesions type B2 or C	65 (79.2%)	568 (67.7%)	< 0.04
Chronic total occlusions	2 (2.4%)	12 (1.4%)	NS

Data are presented as number and percentage of patients and mean ± standard deviation values; GER — octogenarians; CG — control group

Table 3. The incidences of puncture site complications and conversion rate from transradial to transfemoral approach were slightly higher among the elderly patients. Angiographic success rates (96.3% vs. 98.9%; $p = \text{NS}$) were not significantly different between the two groups. GER patients were prone to complications with a lower ratio of both technical and procedural success. In-hospital MACEs were significantly more frequent in older patients with regard to in-hospital mortality (4.8% vs. 0.83%), the occurrence of periprocedural MI (6.09% vs. 1.6%), and transient ischaemic attack or stroke (2.4% vs. 0.11%), respectively. It is noticeable that there was no in-hospital death in elderly patients treated due to stable CAD. Among patients with periprocedural MI the stent

thrombosis rate was significantly higher in the GER group. All data regarding procedural outcomes are summarised in Tables 4–6. Elderly patients with ACS were at significant higher risk of MACE compared to younger patients with the same diagnosis (Table 4).

DISCUSSION

The present study was conducted in a group of 920 consecutive patients referred for PCI in 2012 because of various clinical indications. A major finding of our study is that the initial procedural success rate was significantly inferior in the elderly. ACSs were the most common indication for PCI in both groups, but a significantly greater proportion of very el-

Table 3. Percutaneous coronary intervention procedure characteristics

	GER, n = 82 (age > 85 years)	CG, n = 838 (age < 85 years)	P
Number of treated vessels:			
1	63 (76.9%)	729 (86.9%)	< 0.02
2	17 (20.7%)	82 (9.9%)	< 0.005
3	2 (2.4)	27 (3.2%)	NS
Target lesions treated	127 (100%)	965 (100%)	
Graft (SVBG)	8 (6.3%)	55 (5.7%)	NS
Left main stem	4 (3.1)	32 (3.3%)	NS
BMS implanted	39 (30.7%)	194 (20.1%)	< 0.009
DES implanted	77 (60.7%)	732 (75.9%)	< 0.001
POBA (all)	6 (4.7%)	28 (2.9%)	NS
POBA with DEB	5 (3.9)	11 (2.1%)	NS
Lesions treated per patient	1.5 ± 0.41	1.1 ± 0.39	< 0.001
Stents per patient used	1.4 ± 0.42	1.1 ± 0.4	< 0.001
Stents per lesion used	0.91 ± 0.21	0.95 ± 0.12	< 0.01
Intra-aortic balloon pump	4 (4.8%)	16 (1.9%)	NS
GP IIb/IIIa	10 (12.1%)	243 (28.9%)	< 0.01

Data are presented as number and percentage (in abbreviation) of patients; BMS — bare metal stent; DEB — drug eluting balloon; DES — drug eluting stent; GP IIb/IIIa — intravenous infusion of glycoprotein IIb/IIIa inhibitor; POBA — percutaneous balloon angioplasty; SVBG — saphenous vein graft; GER — octogenarians; CG — control group

Table 4. Percutaneous coronary intervention procedure outcomes and complications

	GER (age > 85 years)			CG (age < 85 years)			P
	All	S-IHD	ACS	All	S-IHD	ACS	
	(n = 82)	(n = 28)	(n = 54)	(n = 838)	(n = 414)	(n = 424)	
Angiographic success	79 (96.3%)	28 (100%)	51 (94.4%)	829 (98.9%)	412 (99.5%)	417 (98.3%)	*
Technical success	76 (92.7%)	27 (96.4%)	49 (90.7%)	820 (97.8%)	409 (98.8%)	411 (96.9%)	x
Procedural success	68 (82.9%)	23 (82.1%)	45 (83.3%)	806 (96.1%)	402 (97.1%)	404 (95.2%)	z #
Total mean procedure time [min]	65.9 ± 29.8	70.5 ± 27.6	61.3 ± 30.1	57.8 ± 36.2	65.5 ± 38.5	50.5 ± 27.9	y

Data are presented as number and percentage of patients and mean ± standard deviation values; Bold significant differences GER ACS vs. CG ACS patients; *p = NS (GER vs. CG); #p < 0.01 (GER ACS vs. CG ACS); x: p < 0.02 (GER vs. CG); z: p < 0.01 (GER vs. CG); y: p < 0.05 (GER vs. CG); ACS — acute coronary syndrome; S-IHD — patients with stable angina pectoris; GER — octogenarians; CG — control group

derly patients than those in the control group presented ACS on admission. We observed that all-cause in hospital mortality, MACE rates, and CIN were higher in elderly patients treated with PCI as compared to younger ones. Minor complications mainly related to puncture site were also more frequent in these patients, but the difference between the groups was not significant.

In our hospital we can observe a systematic growth of patients aged 85 years and more treated with PCI, starting from 4.5% in 2008 up to 8.9% in 2012. This observation is similar to the study performed by Claessen et al. [9], who described increasing rates of elderly patients treated with PCI

during 11 years of observation (from 3.5% in 1997 to 8.8% in 2007). The gradual ageing of the population in conjunction with a high incidence of CAD and MI may be responsible for the observed increasing number of elderly patients referred for PCI. However, most common designs of modern randomised trials exclude very old patients from the study population, so there is limited data on the safety and efficacy of PCI in octogenarians [10]. The demographic structure of the studied group revealed a significant increase in the percentage of women undergoing PCI with the ageing of the studied population. This fact may be related to the longer life expectancy in the female population [11–14]. The observed

Table 5. Major adverse cardiovascular events, major adverse cardiac event (MACE)

	GER (age > 85 years)			CG (age < 85 years)			P
	All	S-IHD	ACS	All	S-IHD	ACS	
	(n = 82)	(n = 28)	(n = 54)	(n = 838)	(n = 414)	(n = 424)	
In-hospital MACE	11 (13.4%)	3 (10.7%)	8 (14.8%)	23 (2.7%)	14 (3.4%)	9 (2.1%)	* #
In-hospital mortality	4 (4.8%)	0	4 (7.4%)	7 (0.83%)	2 (0.5%)	5 (1.2%)	* #
MI	5 (6.09%)	2 (7.14%)	3 (5.5%)	14 (1.6%)	10 (2.4%)	4 (0.9%)	x #
MI due to acute stent thrombosis	3 (3.6%)	0	3 (5.5%)	5 (0.59%)	2 (0.5%)	3 (0.7%)	y #
Transient ischaemic attack	2 (2.4%)	1 (3.6%)	1 (1.9%)	1 (0.11%)	1 (0.2%)	0 (0%)	x @

Data are presented as number and percentage (in abbreviation) of patients; Bold significant differences GER vs. CG, Italic significant differences GER ACS vs. CG ACS patients; *p = NS (GER vs. CG); #p < 0.01 GER ACS vs. CG ACS; x: p < 0.02 (GER vs. CG), y: p < 0.03 (GER vs. CG); @: p < 0.01 (GER vs. CG); ACS — acute coronary syndrome; MI — myocardial infarction; S-IHD — patients with stable angina pectoris; GER — octogenarians; CG — control group

Table 6. Adverse events

	GER (age > 85 years)			CG (age < 85 years)			P
	All	S-IHD	ACS	All	S-IHD	ACS	
	(n = 82)	(n = 28)	(n = 54)	(n = 838)	(n = 414)	(n = 424)	
Conversion from transradial to transfemoral approach	6 (7.3%)	2 (7.14%)	4 (7.4%)	37 (4.4%)	19 (4.6%)	18 (4.2%)	NS (all)
Puncture site pseudo-aneurysm/haematoma	5 (6.09%)	1 (3.6%)	4 (7.4%)	24 (2.8%)	9 (2.2%)	15 (3.5%)	NS (all)
Major bleeding related to puncture site	4 (4.8%)	1 (3.6%)	3 (5.5%)	16 (1.9%)	6 (1.4%)	10 (2.3%)	NS (all)
Contrast induced nephropathy	15 (18.2%)	11 (39.2%)	4 (7.4%)	52 (6.2%)	31 (7.4%)	21 (4.9%)	x # \$

Data are presented as number and percentage (in abbreviation) of patients; p = NS all (there was not any difference between main groups nor stable angina pectoris nor acute coronary syndrome (ACS) subgroups; S-IHD — patients with stable angina pectoris; #p < 0.001 GER ACS vs. CG ACS; x: p < 0.01 (GER vs. CG), \$: p < 0.01 GER ACS vs. GER S-IHD; GER — octogenarians; CG — control group

higher mortality among elderly patients with ACS as compared with younger ones was reported previously. However, it should be pointed out that invasive reperfusion therapy of CAD in elderly patients proved to be more beneficial than pharmacological treatment, especially in patients with ACS [15–18]. It was proven previously that reperfusion therapy, preferably primary coronary angioplasty, should be used in elderly patients with acute MI, with the same or better clinical benefit, and with a lower risk of bleeding complications when compared with thrombolytic therapy [19, 20]. In this study ACS was the most common indication for PCI in octogenarians. These results were consistent with other PCI studies in elderly patients [21]. Stable CAD was an indication for PCI only in one third of patients in the GER group. Research performed by Teplitsky et al. [22] demonstrated that clinically stable elderly patients with CAD have very good PCI-related prognosis compared with clinically unstable patients [23]. In our studied population, despite similar rates of angiographic success of the PCI procedure, a significant increase of MACE was present in the GER group. A possible explanation for these results may patient selection and characteristics. In the study it was shown that octogenarians were more likely to have multivessel CAD with more complex lesions and more fre-

quent chronic renal failure. Moreover, in these patients more frequently two-vessel angioplasty was performed due to the extent and severity of CAD. The complex anatomy of treated lesions often required implantation of more than one stent, so the time of the procedure and contrast load was significantly higher than in younger patients. These factors indicate that PCI procedure alone was usually more complicated in very old patients. Lower rates of technical success indicate the difficulties encountered with proper stent/balloon placement, which might have led to stent malapposition or dissection of the treated lesion not covered with the stent and consequent suboptimal procedure results. The proportion of DES stents used also varied between groups. Octogenarians were more likely to be treated with a BMS implant. The results of our study strictly reflect the observations described in previous studies [14, 21]. The differences in stent type selection may be due to increased frailty and higher rate of comorbidities in octogenarians. These authors also showed that very old patients are considered to be at high risk of procedural complications and are consequently suboptimally treated in comparison with younger patients. Thus, elderly patients with higher severity of CAD with high risk of restenosis due to complex lesion morphology should gain more benefit from

DES implantation. Since, in elderly patients, the most common appearance of CAD is multivessel and small arteries disease those patients are at higher risk of restenosis, so DES should be used. However, in our study and in previously conducted studies an opposite trend in procedural strategy was observed [24, 25]. In the most recent data presented by Puymirat et al. [26] it was proven that DES implantation was as safe as BMS; these authors also indicate lower rates of target vessel revascularisation in very old patients. Therefore, DES implantation should not be avoided in this subset of patients. The assessment target vessel repeated revascularisation of long term follow up was beyond the scope of this study therefore we are not able to assess repeated revascularisation in studied population.

Another difference in the procedures in the study group was a lower rate of GP IIb/IIIa administration in octogenarians. The main limitation of GP IIb/IIIa administration in our elderly patients was high risk of bleeding. It is known that elderly patients are at a high risk of bleeding post PCI, especially if they receive a combination of antithrombotic medication that may lead to an increased risk of bleeding and subsequent rise in morbidity and mortality [27, 28]. Therefore, indications and contraindications for GP IIb/IIIa inhibitors were evaluated carefully. The lower rate of GP IIb/IIIa usage in GER group was due to the fact that more risk factors associated with bleeding were present in the studied patients.

In this retrospective study we did not observed significant differences in complications such as the following: conversion from transradial to transfemoral approach, puncture site pseudoaneurysm/haematoma, or major bleeding related to puncture site. In the majority of our patients PCI was performed from a transradial approach. Only in 7.3% cases in GER group and in 4.4% of younger patients was the procedure performed from a transfemoral approach. Major bleeding related to puncture site was present only in those patients; however, the rate of this complication was similar in both groups of patients (4.8% GER vs. 1.9% CG; $p = \text{NS}$). Therefore, with the use of a transradial approach PCI procedure seems to be as safe in GER as in younger patients with respect to puncture site complications.

Contrast-induced nephropathy occurred in 67 (7.2%) patients. Compared to controls there was a significantly higher prevalence of contrast-induced nephropathy in the GER group (18.2% vs. 6.2%; $p < 0.01$). Several risk factors for CIN have been identified previously, e.g. chronic renal insufficiency, diabetes mellitus, congestive heart failure, intravascular volume depletion, and the use of a large amount of contrast agent [7, 8]. In initial screening of the studied population it was shown that in elderly patients the prevalence of chronic kidney disease is higher than in controls. Procedure time and contrast load in those patients were also higher than in younger ones. All these factors probably contributed to higher rates of CIN in the GER group [29, 30].

Limitations of the study

The presented study has some limitations. The study was performed in single centre without randomisation. The study was observational and retrospective with analysis of in-hospital outcomes only. Selection of cut-off value for age was based on the World Health Organisation definition of senility. The GER group comprised patients aged 85 years and above and reflected "long-lived" patients. This selection resulted in the small size of the GER study group. PCI procedure outcomes and complications were presented as age-unadjusted results.

CONCLUSIONS

In octogenarian patients aged 85 years and more, PCI appears to be a reasonably safe and effective procedure, especially in patients with stable coronary disease. Initial clinical presentation of the patient has a strong influence on prognosis. The presence of ACS had a significant impact on MACE occurrence and higher mortality. Octogenarians are more prone to development of contrast-induced nephropathy compared to younger patients.

Conflict of interest: none declared

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Zabiegi angioplastyki naczyń wieńcowych u pacjentów w wieku ponad 85 lat: ocena powikłań i śmiertelności wewnątrzszpitalnej

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Streszczenie

Wstęp: W ostatnich latach obserwuje się systematyczny wzrost liczby pacjentów w wieku podeszłym kierowanych na zabiegi przeszłokornej interwencji wieńcowej (PCI). Mimo to wielu kardiologów interwencyjnych niechętnie kwalifikuje te osoby do PCI ze względu na niepewne wyniki tych procedur u pacjentów w bardzo podeszłym wieku, tzw. chorych długowiecznych, starszych niż 85 lat.

Cel: Celem niniejszego badania była ocena parametrów demograficznych, klinicznych i angiograficznych, a także wyników zabiegów PCI u pacjentów w wieku > 85 lat, w porównaniu z młodszymi chorymi hospitalizowanymi w 2012 r.

Metody: Przeprowadzono jednośrodkowe, retrospektywne badanie obejmujące grupę 920 kolejnych osób poddanych PCI. Byli to pacjenci z rozpoznaną chorobą wieńcową, zarówno stabilną, jak i z ostrymi zespołami wieńcowymi (ACS). Pacjentów podzielono na dwie grupy względem wieku: grupę GER — osoby w wieku ≥ 85 lat (n = 82) i grupę kontrolną (GK) w wieku < 85 lat (n = 838).

Wyniki: Średni wiek w grupach badanych wynosił 88,6 roku (GER) vs. 66,7 roku (GK). Wśród chorych starszych było istotnie więcej kobiet (57% vs. 29%; p < 0,001). W grupie GER wskazaniem do PCI był głównie ACS (65% vs. 50%), w tym zawał z uniesieniem odcinka ST (30% vs. 29%; p = NS), a ACS bez uniesienia odcinka ST rozpoznano u 35% w grupie GER vs. u 20% w grupie GK (p = 0,01). Pacjenci z grupy GER charakteryzowali się większą liczbą chorób współistniejących, a także bardziej zaawansowaną postacią choroby wieńcowej ze zmianami w trzech naczyniach wieńcowych. Odsetek osób poddanych PCI, u których stwierdzono powikłania (zgon, ponowny zawał serca, udar, krwawienie) był istotnie wyższy w grupie GER niż w grupie kontrolnej. Wewnątrzszpitalna śmiertelność była istotnie wyższa wśród chorych starszych (4,8%) w porównaniu z grupą kontrolną (0,83%), jednak należy zaznaczyć, że zgony obserwowano tylko i wyłącznie u pacjentów poddanych PCI z rozpoznaniem ACS. Najczęstszym powikłaniem w grupie GER była nefropatia wywołana kontrastem (18,2% vs. 6,2%). Ciężkie powikłania zagrażające życiu, a także śmiertelność były istotnie wyższe w grupie chorych w podeszłym wieku hospitalizowanych z powodu ACS.

Wnioski: Pacjenci w wieku > 85 lat poddawani PCI są narażeni na większe ryzyko wystąpienia powikłań w trakcie hospitalizacji, szczególnie nefropatii wywołanej kontrastem. W grupie chorych w podeszłym wieku śmiertelność okołozabiegowa była istotnie wyższa, jednak tylko wśród pacjentów z ACS.

Słowa kluczowe: przeszłokorna interwencja wieńcowa, śmiertelność, chorzy w wieku podeszłym

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